



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,218	03/24/2004	Kazuya Ueda	1324.70174	3929
7590 01/09/2008				
Patrick G. Burns, Esq. GREER, BURNS & CRAIN, LTD. Suite 2500 300 South Wacker Drive Chicago, IL 60606		EXAMINER CHEN, WEN YING PATTY		
		ART UNIT PAPER NUMBER		
		2871		
		MAIL DATE DELIVERY MODE		
		01/09/2008 PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/808,218

Applicant(s)

UEDA ET AL.

Examiner

W. Patty Chen

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 12-15 and 27-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12-15 and 27-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on Oct. 26, 2007 has been entered.

Response to Amendment

The Amendment filed on Oct. 26, 2007 has been entered. Claims 27-39 are newly added per the Amendment filed. Therefore, claims 1-10, 12-15 and 27-39 are now pending in the current application.

Claim Objections

Claims 27-30 are objected to because of the following informalities: Line 2 of each of claims 27-30 recite the limitation of "the plurality of color filter layers", which lack antecedent basis, hence should be changed to recite "a plurality of color filter layers". Appropriate correction is required.

Claim 32 is objected to because of the following informalities: Line 2 of claim 32 recites the limitation of "the center transmission wavelength", which lack antecedent basis, hence

should be changed to recite "a center transmission wavelength". Appropriate correction is required.

Claim 36 is objected to because of the following informalities: Lines 1-2 of claim 36 contain the limitation of "the effective voltage decreasing slit", which is first introduced in claim 35. Therefore, claim 36 should depend from claim 35 instead of claim 6. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 7-10 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki et al. (US 5644415) in view of Yoshida et al. (US 5936693) further in view of Takeda et al. (US 2003/0058374).

With respect to claim 1 (Amended): Aoki et al. disclose in Figure 10 a liquid crystal display comprising:

- a pair of substrates (elements 1, 2) provided opposite to each other with one of the substrates having a pixel electrode (element 3) and the other of the substrates having a common electrode (element 4);

- a liquid crystal (element 9) sealed between a pair of substrates; and

- a pixel region including at least one low effective voltage area (region corresponding to element 10) in which an effective voltage applied by the pixel and the common electrodes to the liquid crystal is lower than a voltage applied between the pixel and the common electrodes at another area, the at least one low effective area occupying part of the region in a predetermined area ratio (Column 7, lines 3-9), the pixel region having a threshold voltage that is different between the at least one low effective voltage area and said another area, and

- the pixel region also including a color filter layer (element CF) having one color formed on at least one of the pair of substrates that includes a blue color filter (as shown).

Aoki et al. failed to disclose that the effective voltage in the pixel region is different from that in another pixel region including a color filter layer having another color such that the

effective voltage in the low effective voltage areas associated with the blue color filter is lower than the effective voltage in the low effective voltage areas associated with color filters of colors other than blue and that the low effective area has an effective voltage decreasing slit, formed on at least one of the electrodes.

However, Yoshida et al. teach in Figure 29 and Column 18 lines 8-26 of forming effective voltage in the pixel region including one color filter layer of one color different from that in another pixel region including a color filter layer having another color such that the effective voltage in the low effective voltage areas associated with the blue color filter is lower than the effective voltage in the low effective voltage areas associated with color filters of colors other than blue (wherein the low effective area of the blue color filter is larger than the red and the green color filters) and Takeda et al. disclose in figure 4 a low effective area (region corresponding to element 22) having an effective voltage decreasing slit (element 21), formed on at least one of the electrodes.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display device as taught by Aoki et al. wherein the effective voltage of one pixel region of one color is different from that of another pixel region of another color as taught by Yoshida et al., since Yoshida et al. teach that such configuration between the different colored pixel regions helps to obtain images having a good color balance with compensation made for the differences in brightness among the different colored pixels (Column 18, lines 20-26) and to form in the low effective area with an effective voltage decreasing slit on at least one of the electrodes as taught by Takeda et al., since Takeda et

al. teach that such structure helps to improve the moving image display properties (Paragraphs 0107-0112).

As to claim 7: Aoki et al. further disclose in Column 17 line 59 through Column 18 line 6 that the threshold voltage of the low effective voltage area is higher than the threshold voltage of the other area by a predetermined voltage difference; and the voltage difference is in the range from 0.1V to 2.0V.

As to claim 8: Yoshida et al. further teach in Column 18 lines 8-12 of forming different area ratios with respect to the center transmission wavelength λ of the color filter layer that the pixel region has.

As to claim 9: Aoki et al. further disclose in Figure 10 that the low effective voltage area has a dielectric layer (element 10) formed with a predetermined thickness on at least one of the electrodes.

As to claim 10: Aoki et al. further disclose in Figure 10 that the dielectric layer (element 10) is formed like stripes (Column 9, lines 53-61) having a predetermined layer width and gap width.

As to claim 12: Takeda et al. further disclose in Figure 4 that the effective voltage decreasing slit (element 21) is formed like stripes having a predetermined electrode width and gap width.

As to claim 13: Aoki et al. further disclose in Figure 10 that the low effective voltage area is provided in the vicinity of an end of the pixel region (as shown in Figure 10, wherein one of the low effective voltage area is at the edge of the pixel region).

As to claim 14: Aoki et al. further disclose that the liquid crystal is a nematic liquid crystal (Column 1, line 36) having a negative dielectric constant anisotropy (Column 2, lines 43-47 and 51-55) whose initial alignment is vertical to a surface of the substrates (Column 1, line 42).

Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki et al. (US 5644415), Yoshida et al. (US 5936693) and Takeda et al. (US 2003/0058374) in view of Nishida et al. (US 2002/0030780).

With respect to claims 2-4: Aoki et al., Yoshida et al. and Takeda et al. disclose all of the limitations set forth in claim 1, but failed to disclose the retardation values of the liquid crystal layer thickness with respect to different wavelength satisfying the equations set forth in claims 2-4.

However, Nishida et al. disclose a liquid crystal display wherein the Δn of the liquid crystal layer regardless the wavelength value is set to be constant (Paragraph 0186, wherein Δn is 0.0067) and that $d_i / \lambda_i = d_j / \lambda_j$ (Paragraph 0072) regardless of having tilt angle and white is displayed when no polarizer is provided (Paragraphs 0072-0082), therefore, the condition set forth in claims 2 and 4 are met. Nishida et al. further disclose that the wavelength closest to 545 nm (Paragraph 0082, wherein the wavelength is 550nm) has a thickness value of 4.5 μ m, therefore,

$$\Delta n * (4.5\mu\text{m}) = 301.5\text{nm},$$

which satisfies the condition set forth in claim 3.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display device as taught by Aoki et al., Yoshida et al. and Takeda et al. wherein the retardation values of the liquid crystal layer thickness with respect to different wavelength are set as taught by Nishida et al., since Nishida et al. teach that such display characteristic prevents the display from coloring from whichever direction the display apparatus is viewed and that gradation reversal over a larger visibility angle range is also prevented (Paragraphs 0059-0061).

As to claim 5: Aoki et al., Yoshida et al. and Takeda et al. disclose all of the limitations set forth in claim 1, but failed to disclose the retardation values of the constant liquid crystal layer thickness with respect to different wavelength is between 250nm and 450nm.

However, Nishida et al. disclose a liquid crystal display wherein the Δn of the liquid crystal layer regardless the wavelength value is set to be constant (Paragraph 0186, wherein Δn is 0.0067) and that the thickness of the liquid crystal layer is set to be 4.5 μm (Paragraph 0186), thus have a $\Delta n(\lambda k) * d = 301.5nm$, which is within 250nm and 450nm.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display device as taught by Aoki et al., Yoshida et al. and Takeda et al. wherein the retardation values of the constant liquid crystal layer thickness with respect to different wavelength is between 250nm and 450nm as taught by Nishida et al., since Nishida et al. teach that such display characteristic optimizes the brightness of a white display and the color reproduction property (Paragraph 0186).

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki et al. (US 5644415), Yoshida et al. (US 5936693) and Takeda et al. (US 2003/0058374) in view of Kubo et al. (US 2002/0075436; hereinafter referred to as '436).

Aoki et al., Yoshida et al. and Takeda et al. disclose all of the limitations set forth in claim 14, but failed to disclose that the liquid crystal display further comprising an alignment regulating structure for regulating the alignment of the liquid crystal provided on at least one of the substrates, wherein the pixel region has a plurality of alignment regions in which the liquid crystal is aligned in different directions.

However, '436 discloses in Figure 29A a liquid crystal display comprising of alignment regulating structures (element 22b) on at least one of the substrates.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display as taught by Aoki et al., Yoshida et al. and Takeda et al. wherein the liquid crystal display further comprises alignment regulating structures as taught by '436, since '436 teaches that the alignment structures helps to stabilize the radially-inclined orientation regardless of the applied voltage, thus results in a desirable stress resistance (Paragraph 0285).

Claims 6 and 37-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. (US 6466280) in view of Kubo et al. (US 6452654; hereinafter referred to as '654).

With respect to claim 6: Park et al. disclose in Figure 5D a liquid crystal display comprising:

a pair of substrates (element 1; Column 2, lines 31-34) provided opposite to each other with one of the substrates having a pixel electrode (elements 68 and 70 combined) and the other of the substrates having a common electrode (although not shown, but has to be present in order for the display device to function properly);

a liquid crystal sealed between the pair of substrates (Column 2, lines 54-55); and

a pixel region including at least one low effective voltage area (region corresponding to element 72, which is the transmissive region of the pixel region) in which an effective voltage applied by the pixel and the common electrodes to the liquid crystal is lower than a voltage applied between the pixel and the common electrodes at another area, the at least one low effective voltage area occupying part of the region in a predetermined area ratio, the pixel region having a threshold voltage that is different between the at least one low effective voltage area and the another area.

Park et al. failed to specifically disclose that the area ratio of the low effective voltage area to total area of each pixel region is in the range from 0.6 to 0.8.

However, '654 teaches in Column 29 lines 58-63 that in a transflective display device, the area ratio of the transmissive region to the reflective region is 60:40, hence the area ratio of the low effective voltage area to total area of each pixel region is 0.6.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display device as taught by Park et al. wherein the area ratio of the transmissive region to the total area of each pixel region is 0.6 as taught by '654, since '654 teaches that such area ratio helps to obtain good display characteristics (Column 29, lines 58-63).

As to claim 37 (New): Park et al. and '654 disclose all of the limitations set forth in claim 6, but failed to disclose that the low effective voltage area is provided in the vicinity of an end of the pixel region.

However, '654 teaches in Figure 4 that the transmissive region (region corresponding to element 20; analogous to the low effective voltage area as previously discussed) is provided in the vicinity of an end of the pixel region.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display as taught by Park et al. and '654 wherein the transmissive region is provided in the vicinity of an end of the pixel region as taught by '654, since it would have been obvious to change the arrangement and area ratio of the transmissive region with respect to the reflective region in order to obtain the desire display characteristics.

As to claim 38 (New): '654 further disclose in Column 26 lines 14-22 that a nematic liquid crystal having negative dielectric constant anisotropy whose initial alignment is vertical to a surface of the substrate can be used in a transfective display device.

Claims 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. (US 6466280) and Kubo et al. (US 6452654; hereinafter referred to as '654) in view of Nishida et al. (US 2002/0030780).

With respect to claims 27-29 (New): Park et al. and '654 disclose all of the limitations set forth in claim 6, but failed to disclose a plurality of color filter layers wherein the retardation values of the liquid crystal layer thickness with respect to different wavelength satisfying the equations set forth in claims 27-29.

However, Nishida et al. disclose a liquid crystal display comprising a plurality of color filter layers wherein the Δn of the liquid crystal layer regardless the wavelength value is set to be constant (Paragraph 0186, wherein Δn is 0.0067) and that $d_i / \lambda_i = d_j / \lambda_j$ (Paragraph 0072) regardless of having tilt angle and white is displayed when no polarizer is provided (Paragraphs 0072-0082), therefore, the condition set forth in claims 2 and 4 are met. Nishida et al. further disclose that the wavelength closest to 545 nm (Paragraph 0082, wherein the wavelength is 550nm) has a thickness value of 4.5 μ m, therefore,

$$\Delta n * (4.5\mu\text{m}) = 301.5\text{nm},$$

which satisfies the condition set forth in claim 3.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display device as taught by Park et al. and '654 wherein the retardation values of the liquid crystal layer thickness with respect to different wavelength of the plurality of color filter layers are set as taught by Nishida et al., since Nishida et al. teach that such display characteristic prevents the display from coloring from whichever direction the display apparatus is viewed and that gradation reversal over a larger visibility angle range is also prevented (Paragraphs 0059-0061).

As to claim 30 (New): Park et al. and '654 disclose all of the limitations set forth in claim 6, but failed to disclose a plurality of color filter layers wherein the retardation values of the constant liquid crystal layer thickness with respect to different wavelength is between 250nm and 450nm.

However, Nishida et al. disclose a liquid crystal display comprising a plurality of color filter layers wherein the Δn of the liquid crystal layer regardless the wavelength value is set to be

constant (Paragraph 0186, wherein Δn is 0.0067) and that the thickness of the liquid crystal layer is set to be $4.5\text{ }\mu\text{m}$ (Paragraph 0186), thus have a $\Delta n(\lambda k) * d = 301.5\text{nm}$, which is within 250nm and 450nm.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display device as taught by Park et al. and '654 wherein the retardation values of the constant liquid crystal layer thickness with respect to different wavelength of the color filter layers is between 250nm and 450nm as taught by Nishida et al., since Nishida et al. teach that such display characteristic optimizes the brightness of a white display and the color reproduction property (Paragraph 0186).

Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. (US 6466280) and Kubo et al. (US 6452654; hereinafter referred to as '654) in view of Aoki et al. (US 5644415).

Park et al. and '654 disclose all of the limitations set forth in claim 6, but failed to specifically disclose that the threshold voltage of the low effective voltage area is higher than the threshold voltage of the other area by a predetermined voltage difference in the range from 0.1V to 2.0V.

However, Aoki et al. disclose in Column 17 line 59 through Column 18 line 6 a liquid crystal display wherein the threshold voltage of a low effective voltage area is higher than the threshold voltage of the other area by a predetermined voltage difference; and the voltage difference is in the range from 0.1V to 2.0V.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display as taught by Park et al. and '654 wherein the threshold voltage difference is as taught by Aoki et al., since Aoki et al. teach that the field angle can thus be widened and a sufficiently bright display can be secured (Column 18, lines 7-11).

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. (US 6466280) and Kubo et al. (US 6452654; hereinafter referred to as '654) in view of Iijima (US 6909479).

Park et al. and '654 disclose all of the limitations set forth in claim 6, but failed to specifically disclose that the area ratio varies depending on a center transmission wavelength λ of a color filter layer that the pixel region has.

However, Iijima teaches in Figure 3 that the area of transmissive region in each pixel region corresponding to a specific color of the color filter layer differs, hence the area ratio of the low effective region with respect to each pixel region varies depending on a center transmission wavelength of a color filter layer.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display as taught by Park et al. and '654 wherein the area of transmissive region in each pixel region corresponding to a specific color of the color filter layer differs as taught by Iijima, since Iijima teaches that such configuration helps to suppress the influence that irregularities in the spectral properties of the illumination light has on the observed light (Column 14, lines 27-34).

Claims 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. (US 6466280) and Kubo et al. (US 6452654; hereinafter referred to as '654) in view of Okumura (US 7113238).

With respect to claims 33 and 35 (New): Park et al. and Kubo et al. disclose all of the limitations set forth in Claim 6, but failed to disclose that the low effective voltage area has a dielectric layer formed with a predetermined thickness or an effective voltage decreasing slit on at least one of the electrodes.

However, Okumura teaches in Figure 4B of forming a dielectric layer (element 37) and a slit (element 94) in the transmissive region (analogous to the low effective voltage area as previously discussed) on at least one of the electrodes.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display as taught by Park et al. and '654 wherein a dielectric layer and a slit is formed on at least one of the electrodes in the transmissive region as taught by Okumura et al., since such structures helps to obtain a multi-domain display having improved viewing angle.

As to claims 34 and 36 (New): Okumura further discloses in Figure 4A that the dielectric layer (element 37) and the slit (element 94) are formed like stripes having a predetermined electrode width and gap width.

Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. (US 6466280) and Kubo et al. (US 6452654; hereinafter referred to as '654) in view of Kubo et al. (US 2002/0075436; hereinafter referred to as '436).

Park et al. and '654 disclose all of the limitations set forth in the previous claims, but failed to disclose that the liquid crystal display further comprising an alignment regulating structure for regulating the alignment of the liquid crystal provided on at least one of the substrates, wherein the pixel region has a plurality of alignment regions in which the liquid crystal is aligned in different directions.

However, '436 discloses in Figure 29A a liquid crystal display comprising of alignment regulating structures (element 22b) on at least one of the substrates.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display as taught by Park et al. and '654 wherein the liquid crystal display further comprises alignment regulating structures as taught by '436, since '436 teaches that the alignment structures helps to stabilize the radially-inclined orientation regardless of the applied voltage, thus results in a desirable stress resistance (Paragraph 0285).

Allowable Subject Matter

The indicated allowability of claim 6 is withdrawn in view of the newly discovered reference(s) to Park et al. (US 6466280) in view of Kubo et al. (US 6452654). Rejections based on the newly cited reference(s) are as set forth above.

Response to Arguments

Applicant's arguments filed on Oct. 26, 2007 have been fully considered but they are not persuasive.

Regarding claim 1: Applicants argue that Takeda et al. use the dielectric layer 22 in combination with the slits 21 for creating a high threshold voltage region 23, and the area without the dielectric layer 22 (or the slits 21) is the low threshold voltage region. Thus, in Takeda et al, the slits 21 are used in the high threshold voltage area to allow for increased thickness of dielectric layer 22, which is the opposite of the manner of the invention of Claim 1 in which the slits are used in the low effective voltage area for decreasing the effective voltage.

However, the Examiner would like to point out that *low effective voltage areas* are created in areas where a dielectric layer is formed between the pixel electrode and the common electrode, and further when in an area the effective voltage is reduced, its threshold voltage is increased. Therefore, although the slits 21 disclosed by Takeda et al. are formed in the *high threshold voltage region*, but the *high threshold voltage region* is associated with the *low effective voltage area*. Hence, Takeda et al. clearly disclose the limitation as set forth in claim 1 wherein the slits are formed in the *low effective voltage area*, and the rejections are maintained.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to W. Patty Chen whose telephone number is (571)272-8444. The examiner can normally be reached on 8:00-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Nelms can be reached on (571)272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Application/Control Number:
10/808,218
Art Unit: 2871

Page 18

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

W. Patty Chen
Examiner
Art Unit 2871

WPC
1/07/08


ANDREW SCHECHTER
PRIMARY EXAMINER